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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/763,319	04/11/2001	Klaus Fieback	22994 PCT/US	4821

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EXAMINER
VO, HAI

ART UNIT	PAPER NUMBER
1771	

DATE MAILED: 09/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/763,319	FIEBACK ET AL.	
	Examiner	Art Unit	
	Hai Vo	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 June 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *29-39 and 52-94* is/are pending in the application.

4a) Of the above claim(s) *29-39 and 52-64* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *65-94* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 65-72, 74, 78 and 79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salyer (US 5,755,216) in view of Aboutboul et al (US 3,794,713). Salyer teaches a latent heat body comprising silica particles containing a phase change material (PCM) incorporated at the wet mix stage of formation of the cementitious plug. Salyer teaches the PCM made of a paraffin (column 8, line 8). The silica particle is inherently of a granulate form. Figure 1 of Salyer shows the cementitious hollow core building block containing a phase change material in the core. Salyer does not specifically disclose that the silica particle having capillary holding spaces to carry the PCM. Aboutboul, however, teaches a precipitated silica particle having a pore diameter in the range of 300 to 600 A, surface areas within the range of 200 to 500 m2/g as disclosed in Salyer (abstract). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the silica particles having the pore sizes because such porous structure of the silica particle is known in the art and Aboutboul provides necessary details to practice the invention of Salyer.

Salyer does not specifically disclose that the residual air volume is distributed over the pore of the silica particle or the PCM absorbency. However, it appears that

Salyer and Applicants are using the same materials to form the latent heat body and the cementitious plug of Salyer meets all the limitations as required by the claims, it is the examiner's position that the residual air volume would be inherently distributed over the pores of the silica particles. The same token is applied to the PCM absorbency. This is in line with 15 USPQ 2d 1655 (1990). Products of identical chemical composition can not have mutually exclusive properties.

With regard to claims 68, 69, Salyer teaches a latent heat body comprising silica particles containing a phase change material (PCM) incorporated at the wet mix stage of formation of the cementitious plug. Salyer discloses a latent heat body wherein the polyolefin fiber is immersed in a melt of the PCM (column 2, lines 55-60, column 5, lines 35-40). Salyer does not specifically disclose that the cementitious plug comprising the carrier material comprising both silica particles and polyolefin fibers. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the polyolefin fiber in combination of silica particles as a carrier material motivated by the desire to increase the thermal capacity of the latent heat body.

With regard to claim 70, Salyer discloses a mold composite comprising 60% by weight of the PCM (column 8, lines 10-15). However, such a concentration would have been recognized by one skilled in the art as to increase the thermal capacity of the composite (Houle et al, US 4,988,543). As such, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the PCM having an amount instantly claimed

motivated by the desire to increase the thermal capacity of the composite, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. ***In re Aller***, 105 USPQ 233.

With regard to claim 74, Salyer discloses the PCM including a mineral oil and a polymer (column 5, lines 55-60).

With regard to claim 78, Salyer does not specifically disclose that the carrier material is formed as a cohesive structure. However, it appears that Salyer and Applicants are using the same materials to form the carrier material having the pores filled with the PCM. It is the examiner's position that the cohesive structure would be inherently present.

With regard to claim 79, figures 1 and 2 show that the cementitious plug has the form of a plate.

3. Claim 73 is rejected under 35 U.S.C. 103(a) as being unpatentable over Salyer (US 5,755,216) and Aboutboul et al (US 3,794,713), as applied to claim 65 above, further in view of Lane et al (US 4,585,572). Salyer does not specifically disclose the PCM containing a thicknening agent. Lane, however, teaches the inclusion of the thickening agent to the PCM to form a micelle structure throughout the PCM to prevent segregation during repeated cycles of freezing and thawing (abstract). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the thickening agent with the PCM motivated

by the desire to form a micelle structure throughout the PCM to prevent segregation during repeated cycles of freezing and thawing.

4. Claims 75-77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salyer (US 5,755,216) and Aboutboul et al (US 3,794,713), as applied to claim 65, further in view Kaercher et al (US 3,687,351) and as evidenced by Salyer (US 5,053,446). Salyer'216 does not specifically disclose that the molded composite has a sheath consisting of a film/foil material. Salyer'446 as an evidence provides the necessary details to practice the invention of Salyer'216. Salyer'446 discloses that the molded composite has been used in the form of a beverage container which inherently forms a sheath structure (column 8, lines 42-44). Salyer discloses the beverage container being impermeable to the PCM (column 8, lines 61-63). Kaercher teaches the beverage container having a film/foil material, foil layer 20, a plastic film layer 44 (figure 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the beverage container having the film/foil material because the film/foil material is a typical material widely used in the beverage containers.
5. Claims 80-86, 88, and 92 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salyer (US 5,755,216), Aboutboul et al (US 3,794,713) and as evidenced by Fennesz (US 4,646,814). Salyer discloses the latent heat body being incorporated into structural elements such as walls or floors of building (column 1, lines 60-65). Salyer does not specifically disclose that the molded composite being used in combination with a heating register between a bar floor and a covering. Fennesz

reference as an evidence discloses the floor comprising a heating register between the bar floor and covering (column 4, lines 25-30). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the latent heat body of Salyer as modified by Aboutboul in combination with a heat register of Fennesz because such is the intended use of the materials and Fennesz provides the necessary details to practice the invention of Salyer.

6. Claims 87 is rejected under 35 U.S.C. 103(a) as being unpatentable over Salyer (US 5,755,216), Aboutboul et al (US 3,794,713) and as evidenced by Fennesz (US 4,646,814), as applied to claim 80 above, in view of Lane et al (US 4,585,572). Salyer does not specifically disclose the PCM containing a thicknening agent. Lane, however, teaches the inclusion of the thickening agent to the PCM to form a micelle structure throughout the PCM to prevent segregation during repeated cycles of freezing and thawing (abstract). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the thickening agent with the PCM motivated by the desire to form a micelle structure throughout the PCM to prevent segregation during repeated cycles of freezing and thawing.

7. Claims 89-91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salyer (US 5,755,216), Aboutboul et al (US 3,794,713) and as evidenced by Fennesz (US 4,646,814), as applied to claim 80, further in view Kaercher et al (US 3,687,351) and as evidenced by Salyer (US 5,053,446). Salyer'216 does not specifically disclose that the molded composite has a sheath consisting of a film/foil

material. Salyer'446 as an evidence provides the necessary details to practice the invention of Salyer'216. Salyer'446 discloses that the molded composite has been used in the form of a beverage container which inherently forms a sheath structure (column 8, lines 42-44). Salyer discloses the beverage container being impermeable to the PCM (column 8, lines 61-63). Kaercher teaches the beverage container having a film/foil material, foil layer 20, a plastic film layer 44 (figure 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the beverage container having the film/foil material because the film/foil material is a typical material widely used in the beverage containers.

8. Claims 93 and 94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salyer (US 5,755,216), Aboutboul et al (US 3,794,713) and as evidenced by Fennesz (US 4,646,814), as applied to claim 80 above, further in view of Buckley (US 6,004,662). Salyer is silent as to the phase transition temperature of the latent heat storage material of the first layer different from that of the latent heat storage material of the second layer. Buckley teaches the PCM in layers 1, 2, 3 of the composite having different phase transition temperatures (figure 10). It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the latent heat storage material in the first and second layers having different phase transition temperatures to control the rate of the heat absorption of the composite.

Response to Arguments

9. The claim objections, 112 claim rejections and art rejections over Salyer and Houle have been overcome by the present amendment and response.

Applicant's arguments with respect to claims 65-94 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (703) 605-4426. The examiner can normally be reached on M,T,Th, F, 8:30-6:00 and on alternating Wednesdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (703) 308-2414. The fax

phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

HV

TERREL MORRIS
SUPERVISORY PATENT EXAMINER
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